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MIS 2501: Section 01  
Flash Research Assignment  
Virtualization and Cloud Computing

The consolidation of our servers onto virtual machines under VMware will improve reliability and minimize downtime, allowing us to acquire \$9.2 million in three-year net benefits. Instead of installing several physical servers operating low utilization during this hardware refresh cycle, virtualization can combine processing power onto fewer servers to operate at higher total utilization (Energy Star, 2015).

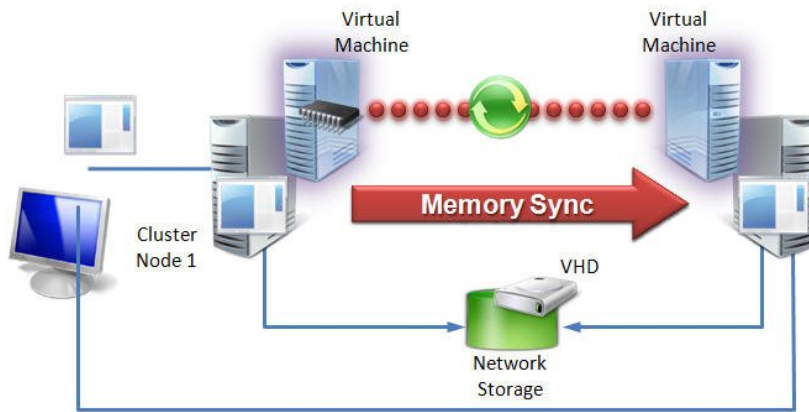
With tight budgets and energy conservation initiatives during this hardware refresh cycle, we can consolidate 80 percent of our physical servers onto virtual machine servers. Reducing hardware maintenance in our data center improves reliability. Simultaneously, virtual servers can restart applications more rapidly than physical servers to speed up disaster recovery. Server virtualization offers live migration, which involves moving a running virtual machine between different physical machines without disconnecting the client or application, to reduce downtime.

By virtualizing the physical servers in our data center, we can reduce hardware to generate a three-year net benefit of \$9.2 million. It will cost \$4.8 million to implement and maintain 200 physical servers and 80 virtual machines. Including the cost of hardware maintenance, software maintenance, technical support, power and cooling, and implementation of 1,000 physical servers, we benefit \$14 million. Virtualization will create an efficient, responsive IT environment while generating savings.

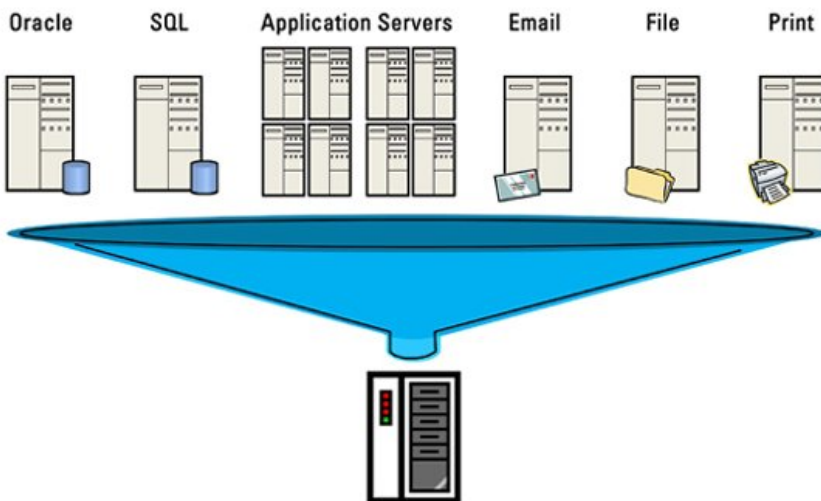
**Figure 1**

	Current Servers	Future Servers	Benefits / year
Physical Servers	1,000	200	-
Virtual Machines	0	80	-
Cost to Purchase	\$ 8,000,000.00	\$ 2,880,000.00	\$ 5,120,000.00
Cost of Maintenance Year 1	\$ 2,000,000.00	\$ 640,000.00	\$ 1,360,000.00
Cost of Maintenance Year 2	\$ 2,000,000.00	\$ 640,000.00	\$ 1,360,000.00
Cost of Maintenance Year 3	\$ 2,000,000.00	\$ 640,000.00	\$ 1,360,000.00
Totals	\$ 14,000,000.00	\$ 4,800,000.00	\$ 9,200,000.00

**Figure 2 – Live migration**



**Figure 3 – Virtualization**



## Citations

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